

Gp/2827

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: M. Yasuda, et al.
Application No.: 10/040,804 Group No.: 2827
Filed: November 8, 2001 Examiner: Norris, Jeremy
For: ELECTRONIC COMPONENT AND METHOD AND STRUCTURE FOR
MOUNTING SEMICONDUCTOR DEVICE

BOX NON-FEE AMENDMENT
Assistant Commissioner for Patents
Washington, D.C. 20231

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AMENDMENT TRANSMITTAL

1. Transmitted herewith is an amendment for this application.

STATUS

2. Applicant is
[] a small entity. A statement:
[] is attached.
[] was already filed.
[X] other than a small entity.

EXTENSION OF TERM

NOTE: "Extension of Time in Patent Cases (Supplement Amendments) -- If a timely and complete response has been filed after a Non-Final Office Action, an extension of time is not required to permit filing and/or entry of an additional amendment after expiration of the shortened statutory period.

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. SECTION 1.8(a))

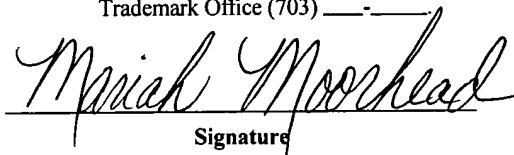
I hereby certify that, on the date shown below, this correspondence is being:

MAILING

- [X] deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

FACSIMILE

- [] transmitted by facsimile to the Patent and Trademark Office (703) ____-____.


Signature

Date: October 28, 2002

Mariah Moorhead
(type or print name of person certifying)

If a timely response has been filed after a Final Office Action, an extension of time is required to permit filing and/or entry of a Notice of Appeal or filing and/or entry of an additional amendment after expiration of the shortened statutory period unless the timely-filed response placed the application in condition for allowance. Of course, if a Notice of Appeal has been filed within the shortened statutory period, the period has ceased to run." Notice of December 10, 1985 (1061 O.G. 34-35).

NOTE: See 37 C.F.R. Section 1.645 for extensions of time in interference proceedings, and 37 C.F.R. Section 1.550(c) for extensions of time in reexamination proceedings.

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. Section 1.136 apply.

(complete (a) or (b), as applicable)

- (a) ☐ Applicant petitions for an extension of time under 37 C.F.R. Section 1.136 (fees: 37 C.F.R. Section 1.17(a)(1)-(4)) for the total number of months checked below:

	Extension (months)	Fee for other than small entity	Fee for small entity
<input type="checkbox"/>	one month	\$ 110.00	\$ 55.00
<input type="checkbox"/>	two months	\$ 400.00	\$ 200.00
<input type="checkbox"/>	three months	\$ 920.00	\$ 460.00
<input type="checkbox"/>	four months	\$ 1,440.00	\$ 720.00

Fee: \$ _____

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

- ☐ An extension for _____ months has already been secured. The fee paid therefor of \$ _____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ _____

OR

- (b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. Section 1.16(b)-(d)) has been calculated as shown below:

(Col. 1)						(Col. 2)		(Col. 3) SMALL ENTITY		OTHER THAN A SMALL ENTITY								
Claims Remaining After Amendment		Highest No. Previously Paid For		Present Extra		Rate		Addit. Fee		OR		Rate		Addit. Fee				
Total	9	Minus		20		=		x \$9 =		\$		x \$18 =		\$0				
Indep.	4	Minus				*=		4		x \$42 =		\$		x \$84 = \$0				
[] First Presentation of Multiple Dependent Claim									+ \$140 =			\$		+ \$280 = \$0				
									Total Addit. Fee			\$		OR		Total Addit. Fee \$0		

- * If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3,
 ** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest No. Previously Paid For" (Total or Indep.) is the highest number found in the appropriate box in Col. 1 of a prior amendment or the number of claims originally filed.

WARNING: "After final rejection or action (Section 1.113) amendments may be made canceling claims or complying with any requirement of form which has been made." 37 C.F.R. Section 1.116(a) (emphasis added).

(complete (c) or (d), as applicable)

- (c) ☒ No additional fee for claims is required.

OR

- (d) ☐ Total additional fee for claims required \$ _____.

FEE PAYMENT

5. ☐ Attached is a check in the sum of \$ _____.
☐ Charge Account No. _____ the sum of \$ _____.
 A duplicate of this transmittal is attached.

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USSN: 10/040,804
Page 4

FEE DEFICIENCY

NOTE: If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum, six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to charge the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, (1065 O.G. 31-33).

6. ☒ If any additional extension and/or fee is required, charge Account No. 04-1105.

AND/OR

☒ If any additional fee for claims is required, charge Account No. 04-1105.

Respectfully submitted

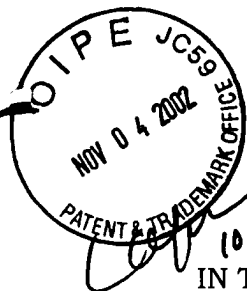
Date: October 28, 2002

By: 

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Attorney Docket No. 70551/56,677
#7/A
Amend.
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11/7/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): M. Yasuda, et al. ✓

EXAMINER: Norris, Jeremy

SERIAL NO.: 10/040,804 ✓

GROUP: 2827

FILED: November 8, 2001 ✓

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MOUNTING SEMICONDUCTOR DEVICE

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CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: **BOX NON-FEE AMENDMENT**, Commissioner for Patents, Washington, D.C. 20231 on October 28, 2002.

By:

Mariah Moorhead
Mariah Moorhead

Assistant Commissioner for Patents
Box: Non-Fee Amendment
Washington, DC 20231

Sir/Madam:

RESPONSE TO OFFICE ACTION

The following is in response to the Office Action mailed July 31, 2002 in the above-referenced application.

The Applicants believe that no extension of time is required since this response is being filed before the expiration of the specified time period. The Applicants, however, conditionally petition for an extension of time to provide for the possibility

that such a petition has been inadvertently overlooked and is required. As provided below, charge Deposit Account **04-1105** for any required fee.

Please amend the subject application as follows:

IN THE SPECIFICATION

Please **replace** the paragraph beginning at line 31 on page 4 with the following:

A1
A semiconductor device according to the present invention is an electronic component including, on electrodes, a plurality of connection materials connected to another electronic component. The connection materials include a composite connection material formed of a core and a conductor covering the core, the core having a low modulus of elasticity at room temperature smaller than a modulus of elasticity of the conductor at room temperature, and include a single-layer connection material formed of a conductor.

Please replace the three paragraphs beginning at line 6 on page 15 and ending at line 20 on page 16 with the following:

A2
The self-alignment function is explained below in more detail. Single-layer connection materials (bumps) 3 arranged in the inner area in the electrode region of the semiconductor device melt in a mounting process to serve the self-alignment function. Accordingly, nuclei 1 covered with melted conductor in composite connection materials 9 move to respective positions appropriate for stress alleviation after mounting. If all of the connection materials are composite connection materials, an undesirable state occurs as described below. Suppose here that nuclei 1 of composite connection materials 9 are each a resin ball with a low modulus of elasticity and the resin ball is covered with a conductor, which is Sn-Pb alloy. When semiconductor device 5 having these connection materials is connected to substrate 6, the smaller amount of conductor, Sn-Pb, covering resin balls 1 results in an insufficient self-alignment function. Then, resin balls do not move to respective